



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,627	11/25/2003	Mike Suekawa	200208870-1	7726
22879	7590	05/30/2006		
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				EXAMINER NGUYEN, HUNG THANH
				ART UNIT 2841 PAPER NUMBER

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/721,627	SUEKAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	HUNG T. NGUYEN	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 April 2006.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) 14-28 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1, 2, 4-13, 29, 30, 32 is/are rejected.

7) Claim(s) 3,31 and 33-35 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 7-11 and 21 rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi (US 4901204).

**Regarding claim 1, 21:** Hayashi discloses in figure 12, a printed circuit assembly carrier comprising: a carrier frame (embodiment of figure 12) configured to hold one printed circuit assembly (73, 74) selected from at least two different printed circuit assembly types (73, 74 appears to be two types) that respectively mount to a storage drive in at least two different orientations (as shown in figure 12, boards are capable of placing in different orientation) with respect to the storage drive; a first toolless retention (24) feature coupled to a first surface of the carrier frame (embodiment of figure 12) and configured to retain the selected one printed circuit assembly (73, 74) to the carrier frame; and a second toolless retention (58) feature coupled to a second surface of the carrier frame (embodiment of figure 12) and configured to retain the carrier frame to the storage drive, the first (24) and second (58) toolless retention features being

mutually configured to hold the at least two different printed circuit assembly types in respective different orientations with respect to the storage drive (elements 24, 58 is used to retain circuit board). Hayashi discloses in an abstract that the unit can be secured to chassis or to another form of fixed plate. Therefore, it can be secured respect to storage drive.

**Regarding claim 2:** Hayashi discloses the carrier frame (explain in claim 1) is constructed from molded plastic (see column 3, line 38-40).

**Regarding claim 4:** Hayashi discloses in figure 12 the carrier frame (explain in claim 1) comprises a second member (17, 77) coupled at an end of the first member (24, 76) substantially perpendicular to the first member (24, 76), the second member (17, 77) extending beyond the interior planar surface (explain in claim 3) to the second surface (104 in figure 13) that couples to the second toolless retention (explain in claim 1) feature.

**Regarding claim 7:** Hayashi discloses in figure 12 an electronic device comprising: a housing (see abstract); first (explain in claim 1) and second printed circuit assemblies (explain in claim 1) of respective different first (explain in claim 1) and second (explain in claim 1) types adapted to couple to the housing (see abstract); first and second identical printed circuit assembly carriers (see figure 12 of board assembly carriers to hold boards 2, 4, 6) adapt to respectively couple to the first (explain in claim 1) and second printed circuit assemblies (explain in claim 1) to the housing (see abstract), the carriers coupling the printed circuit assemblies of different types to the housing (see abstract) in different

orientations (as shown in figure 12, boards are capable of placing in different orientation) with respect to the housing via toolless retention (58, 76) features.

**Regarding claim 8:** Hayashi discloses in figures 1, 2, the electronic device assembly further comprising: a third printed circuit assembly (boards 6) capable of coupling to a side of the housing (see abstract).

**Regarding claim 9:** Hayashi discloses in figures 1, 2 the electronic device assembly further comprising: a third printed circuit assembly (board 6) capable of coupling to a side of the housing (see abstract), the third printed circuit assembly (board 6) being substantially planar and having a first planar (lower surface side of board 6 which is its side facing downward) side capable of coupling to the housing (see abstract) and a second opposing planar side, wherein a first (explain in claim 1) of the plurality of identical printed circuit assembly carriers (embodiment of figure 12) couples the first printed circuit assembly (explain in claim 1) to the second planar side of the third printed circuit assembly (see figure 1, 2 of board 6).

**Regarding claim 10:** Hayashi discloses in figures 1, 2, the electronic device assembly further comprising: a third printed circuit assembly (explain in claim 8) capable of coupling to a side of the housing (see abstract), the third printed circuit assembly (explain in claim 8) being substantially planar and having a first planar side (explain in claim 9) capable of coupling to the housing (see abstract) and a second opposing planar side, wherein a second of the plurality of identical printed circuit assembly carriers (embodiment of figure 12) couples the second

printed circuit assembly (explain in claim 1) substantially perpendicular to the third printed circuit assembly (explain in claim 8).

**Regarding claim 11:** Hayashi discloses in figures 1, 2, the electronic device assembly wherein the second printed circuit assembly (4) and the second of the two identical printed circuit assembly carriers (embodiment of figure 12) are implemented for usage of the electronic device assembly in a duplex configuration.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 12, 13, 29, 30, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 4,901,204) in view of Ahern (US 6,578,101) and Hileman et al. (US 5,259,783).

**Regarding claim 5:** Hayashi disclose all elements of the carrier as described above with respect to claim 1, Hayashi does not disclose mounting features coupled to the carrier frame adapted to mount the selected one printed circuit assembly of the at least two different printed circuit assembly types whereby the at least two different printed circuit assembly types mount to the same features.

Hileman et al. discloses in figure 2, mounting features coupled to the carrier frame (50) adapted to mount the selected one printed circuit assembly of the at least two different printed circuit assembly types (30, 40) whereby the at least two different printed circuit (30, 40) assembly types mount to the same features (60).

Hayashi and Hileman et al. are analogous art because they are from the same field of endeavor to make retaining devices.

Therefore, it would have been obvious for one ordinary skill in the art at the time of the invention to make device of Hayashi to have two printed circuit board mount to the same features as taught by Hileman et al. for the benefit of saving space in chassis.

**Regarding claim 6, 13:** Hayashi discloses all the elements of an electronic device assembly as described above with respect to claim 7, Hayashi does not disclose the cable retention couple to the carrier frame.

However, it is old and well known for one ordinary skill in the art to make cable retention for the purpose of keeping wires in place.

Therefore, it would have been obvious for one ordinary skill in the art at the time of the invention to make cable retention for the benefit of keeping wires in place.

**Regarding claim 12:** Hayashi discloses all the elements of an electronic device assembly as described above with respect to claim 7 except Hayashi does not disclose the hard disk drive and the duplex printed circuit assembly.

Ahern discloses in figures 1, 5, the hard disk drive (140) and the duplex printed circuit assembly (see column 6 and figure 1).

Hayashi and Ahern are analogous art because they are from the same field of endeavor to make electronic assemblies.

Therefore, it would have been obvious for one ordinary skill in the art at the time of the invention to make device of Hayashi to have disk drive/duplex as taught by Ahern for the benefit of two ways communication.

**Regarding claim 29:** Hayashi discloses figure 12, the carrier frame is configured to hold the at least two different printed circuit assembly. Hayashi does not disclose the storage drive is at least one hard disk drive.

Ahern discloses in figures 1, 5, the storage drive is at least one hard disk drive (140).

Ahern discloses in figures 1, 5, the hard disk drive (140) and the duplex printed circuit assembly (see column 6 and figure 1).

Hayashi and Ahern are analogous art because they are from the same field of endeavor to make electronic assemblies.

Therefore, it would have been obvious for one ordinary skill in the art at the time of the invention to make device of Hayashi to have disk drive as taught by Ahern for the benefit of storing the data. Hayashi does not disclose the printed circuit board in mode of simplex or duplex but it is old and well known for one ordinary skill in the art to design frame to accommodate multi-printed circuit boards with simplex/duplex modes.

**Regarding claim 30:** Hayashi discloses in figure 12, the assembly comprising: the first (24, 76) and second (58, 77) identical printed circuit assembly carriers configured to secure first (73) and second (74) different printed circuit assembly

types; mounting features coupled to the first (73) and second (74) identical printed circuit assembly carriers configured to mount the first and second different printed circuit assembly types (73, 74); and a plurality of toolless retention (24, 58, 76, 77) features coupled to the first (24, 76) and second (58, 77) identical printed circuit assembly carriers and configured to retain the mounted first and second different printed circuit assembly types (73, 74) to the electronic device in respective different orientations.

**Regarding claim 32:** Hayashi discloses all elements of the assembly as described above with respect to claim 7. Hayashi does not disclose a duplex printed assembly and the second printed circuit assembly carrier coupling the duplex printed circuit assembly to the hard disk drive housing in a second orientation.

Ahern discloses in figures 1, 5, a duplex printed assembly (see column 6 and figure 1) and the second printed circuit assembly carrier coupling the duplex printed circuit assembly to the hard disk drive housing in a second orientation.

Hayashi and Ahern are analogous art because they are from the same field of endeavor to make electronic assemblies.

Therefore, it would have been obvious for one ordinary skill in the art at the time of the invention to make device of Hayashi to have duplex couple to hard disk as taught by Ahern for the benefit of two ways communication.

***Allowable Subject Matter***

Claims 3, 31, 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Regarding claim 3:** Hayashi discloses in figure 12 the carrier frame comprises a first member (24, 76) having parallel opposing planar surfaces (surface portion of 73) including an interior planar surface (the surface below mounting board 73) and an exterior planar surface (the surface 's base of 72). Hayashi does not disclose the interior planar surface being the first surface coupled to the first toolless retention (24) feature, the exterior planar surface being the second surface coupled to the second toolless retention feature. There would be no motivation to make this modification.

**Regarding claim 31:** Hayashi discloses all elements of the assembly as described above with respect to claim 7, Hayashi does not disclose the first printed circuit assembly carrier coupling the manageability printed circuit assembly to the hard disk drive printed circuit assembly in a first orientation. There would be no motivation to make this modification.

**Regarding claim 33:** Hayashi discloses all elements of the assembly as described above with respect to claim 7. Hayashi does not disclose the carrier coupling the manageability printed circuit assembly. There would be no motivation to make this modification.

***Response to Arguments***

Applicant's arguments with respect to claims 1-13, 29-35 have been considered but are moot in view of the new ground(s) of rejection.

**Relevant Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Ruff (US 6831840) teaches the bracket assembly, Spychalla (US 2005/011249) teaches the data storage and Laub (US 5713744) teaches the integrate circuit socket, Ahern (US 6,578,101) teaches the duplex/simplex circuitry, Welin (US 6,975,629) teaches the processing packet, Kobayasi et al. (US 6,333,932) teaches the communication system.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG T. NGUYEN whose telephone number is 571-272-5983. The examiner can normally be reached on 8:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KAMMIE CUNEO can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

HN

HUNG NGUYEN

5/23/06  
KAMMIE CUNEO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800